



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,522	11/05/2003	Tommy Hansen	H0610.0355/P355	9436

24998 7590 11/15/2006

DICKSTEIN SHAPIRO LLP
1825 EYE STREET NW
Washington, DC 20006-5403

EXAMINER

HYUN, PAUL SANG HWA

ART UNIT	PAPER NUMBER
----------	--------------

1743

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,522

Applicant(s)

HANSEN ET AL.

Examiner

Paul S. Hyun

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

REMARKS

Claims 1-10 are pending. Claims 1-9 have been amended and new claim 10 was added. The amendments made to the claims have overcome the claim objection cited in the previous Office action. Consequently, the objection has been withdrawn. The amendments made to the claims have overcome the claim rejections under 35 U.S.C. sections 112 and 101 cited in the previous Office action. Consequently, the rejections have been withdrawn. It should be noted that the amendments made to the claims have changed the scope of all pending claims.

The amended Specification submitted by Applicants has been acknowledged. Consequently, the objection to the Specification cited in the previous Office action has been withdrawn.

The amended Drawing submitted by Applicants has been acknowledged. Consequently, the objection the drawing cited in the previous Office action has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1, 2, 6 and 10** are rejected under 35 U.S.C. 102(b) as being anticipated by Santiago et al. (US 3,876,384).

Art Unit: 1743

Santiago et al. disclose a reactor comprising a shell 1, an inlet and an outlet, a metallic basket formed by reinforcement 8 and flanges 9 that coincides with the inlet, insulation 7 that is situated between the metallic basket and the shell, and a fixed monolithic catalyst bed 2 wherein the catalyst bed comprises grid-like channels 3. The inner surface of reinforcement 8 is coated with a layer of ceramic material 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Santiago et al. in view of Mentschel (US 4,018,573).

Santiago et al. do not disclose a heating means to maintain a high reaction temperature inside the reactor. However, reactors having electric heaters are well-known in the art.

Mentschel discloses a reactor comprising an electric heater for controlling the temperature of the reaction within a reaction chamber (see lines 20-35, col. 7). In light of the disclosure of Mentschel, it would have been obvious to one of ordinary skill in the art to provide a heater at the inlet channel of the reactor disclosed by Santiago et al. so that a desired reaction temperature can be maintained within the reactor.

Art Unit: 1743

Claims 4, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santiago et al. in view of Mentschel as applied to claim 3 above, and further in view of Ravault (US 3,895,917) and Deshpande (US 2002/0090326 A1).

Neither Santiago et al. nor Mentschel disclose a catalyst comprising platinum, rhodium, ruthenium or nickel.

Like the reactor disclosed by Santiago et al., Ravault discloses a reactor for catalytically detoxifying exhaust gas of internal combustion engines. The reference also discloses a method for detoxifying the exhaust gas. The reactor comprises a catalyst bed that oxidizes hydrocarbons and carbon monoxide to harmless mixture of carbon dioxide and steam (see lines 1-29, col. 1). Because the reactor disclosed by Ravault is intended for the same purpose as the reactor disclosed by Santiago et al., it would have been obvious to one of ordinary skill in the art to substitute the catalyst bed disclosed by Santiago et al. with the catalyst bed disclosed by Ravault and detoxify the exhaust gas of internal combustion engines using the modified reactor.

Deshpande discloses a reactor for processing compact fuel. The reference discloses the use of platinum to catalyze the oxidation of carbon monoxide (see [0032]). In light of the disclosure of Deshpande, It would have been obvious to one of ordinary skill in the art to provide a coating of platinum to the modified Santiago et al. reactor in order to assist the oxidation of carbon monoxide.

Art Unit: 1743

Claims **8 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Santiago et al. in view of Mentschel, Ravault and Deshpande as applied to claims 4, 5 and 7 above, and further in view of Arment et al. (US 5,570,576).

Neither Santiago et al., Mentschel, Ravault nor Deshpande disclose the temperature of the catalytic conversion of the exhaust gas.

Arment et al. disclose a method for catalytically purifying exhaust gas produced by a combustion engine. The reference discloses that the temperature needed to support oxidation of carbon monoxide and hydrocarbons in the engine exhaust is approximately 850-900 degrees Celsius (see line 54, col. 8).

In light of the disclosure of Arment et al., it would have been obvious to one of ordinary skill in the art to oxidize the exhaust gas produced by a combustion engine using the modified Santiago et al. reactor at a temperature of 900 degrees Celsius because the temperature needed to support oxidation of carbon monoxide and hydrocarbons produced by an engine exhaust is approximately 850-900 degrees Celsius.

Response to Arguments

Applicant's arguments with respect to the art rejection of the claims have been considered but are moot in view of the new grounds of rejections. The claim amendments changed the scope of the claims and necessitated new grounds of rejections.

Art Unit: 1743

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul S. Hyun whose telephone number is (571)-272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/12/06

PSH


Jill Warden
Supervisory Patent Examiner
Technology Center 1700